



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,291	12/08/2004	Masahiko Okada	262964US0XPCT	5683
22850 7590 04/08/2008 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER WOOD, AMANDA P				
ART UNIT 1657		PAPER NUMBER		
NOTIFICATION DATE 04/08/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/516,291

Applicant(s)

OKADA ET AL.

Examiner

AMANDA P. WOOD

Art Unit

1657

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 26-37 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-24 and 26-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Applicant's response and amendments filed 10 December 2007 have been received and entered.

Claims 13-37 have been considered on the merits.

Claims 1-12 remain withdrawn as being drawn to non-elected subject matter. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Withdrawn Rejections

In view of Applicant's amendments to the claims, the rejections under 35 U.S.C. 112, second paragraph, and 35 U.S.C. 102 and 103 have been withdrawn.

New Rejections

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-24 and 26-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al in view of Miyauchi et al (EP 1148142 A1, as cited in the IDS filed 21 January 2005) Matsui et al (US 6,194,164).

A reagent for selective measurement of triglycerides contained in very low density lipoprotein and intermediate density lipoprotein or in very low density lipoprotein in a test sample is claimed.

Okada et al teach a reagent comprising a reaction promoting agent (i.e., a selective reaction promoter) that can be a surface-active agent such as a polyoxyalkylene or a derivative thereof, including polyoxyethylene alkyl ether and polyoxyethylene alkyl phenyl ether (i.e., polyoxyalkylene straight-chain alkyl ethers). Okada et al teach that the reaction promoting agent reacts with lipoprotein lipase to eliminate triglycerides in lipoproteins other than very low density lipoproteins and intermediate density lipoproteins (i.e., VLDL and IDL) by carrying out a series of reactions which make hydrogen peroxide or reduced coenzyme. Okada et al teach that the enzymes used for decomposition of triglycerides into hydrogen peroxide for measurement include lipoprotein lipase, which gives glycerol, which is then changed to glycerol 3-phosphate by glycerol kinase, that changes into dihydroxyacetone-3-phosphate by glycerol-3-phosphate oxidase, followed by colored assay of the generated hydrogen peroxide. Also, Okada et al teach that glycerol-3-phosphate dehydrogenase can be used in lieu of glycerol-3-phosphate oxidase to produce NADH so that NADH can be measured (see, for example, Detailed Description section). Okada et al teach a first reagent comprising a reaction promoting agent and enzymes including lipoprotein

Art Unit: 1655

lipase as well as other enzymes to produce either hydrogen peroxide or a reduced coenzyme, which eliminates the triglycerides from the lipoproteins other than the VLDL's and the IDL's, which includes those from LDL's and HDL's. Okada et al also teach a second reagent which then quantifies the triglycerides in the VLDL's and the IDL's, comprising a reaction promoting agent and enzymes (i.e., lipoprotein lipase) which can react with the triglycerides to generate either hydrogen peroxide or a reduced coenzyme, wherein the reaction promoting agent can be a polyoxyalkylene or a derivative thereof, including polyoxyethylene alkyl ether and polyoxyethylene alkyl phenyl ether. Furthermore, Okada et al teach that the reagents may also contain reaction "auxiliary substances" (i.e., reaction assistants) which can assist the reaction promoter agents, examples of which include polyanion, halogen ion, and metal ions (see, for example, Detailed Description section).

Miyauchi et al beneficially teach reagents for quantitating triglycerides (TG) in lipoproteins, providing a reagent for allowing the reaction of lipoproteins other than the particular lipoprotein, as well as providing lipoprotein lipase (LPL), glycerol kinase (GK), glycerol-3-phosphate oxidase (GPO), and peroxidase. Furthermore, Miyauchi et al beneficially teach that it is useful to add a surfactant or to add an enzyme while allows reaction of a particular lipoprotein (see, for example, page 3 and page 4). Miyauchi et al beneficially teach that in measuring TG in particular lipoproteins, it is preferable to add a reagent for eliminating the reaction of lipoproteins other than the lipoprotein of interest, such as a surfactant which would allows LPL to react specifically with particular lipoproteins, so that a precise measurement of TG in a particular lipoprotein of interest

can be made. Subsequently, Miyauchi et al teach that the same sample can then have a second reagent added to it which contains a surfactant that allows reaction of the particular lipoprotein of interest as well as LPL, so as to obtain a measurement of TG in the lipoprotein of interest.

Matsui et al beneficially teach that preferred surfactants which act on lipoproteins other than LDL include polyoxyalkylene oxide derivatives having HLB (i.e., hydrophilic-lipophilic balance) values of not less than 13 and not more than 15. Matsui et al teach that one particular example is polyoxyethylene nonylphenyl ether (see, for example, col. 3, line 35). Matsui et al further teach that surfactants which act on all lipoproteins include polyoxyalkylene oxide derivatives having HLB values of not less than 11 and not more than 13, particularly polyoxyethylene nonylphenyl ether, for example (see, for example, col. 4, lines 10-40). Matsui et al beneficially teach that the method for calculating HLB of surfactants is well-known in the art, a method which is based in part upon the molecular weight of the hydrophilic portion of the surfactant (e.g., polyoxyethylene).

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the reagent disclosed by Okada et al based upon the beneficial teachings provided by Miyauchi et al, with respect to the art-recognized method for using a two-step process using different reagents containing surfactants and LPL to determine TG in lipoproteins, and by Matsui et al, with respect to the art-recognized method of using surfactants of a particular HLB value or molecular weight to solubilize specific lipoproteins, as discussed above. Okada et al specifically teach

Art Unit: 1655

reagents which act on lipoproteins using surfactants that are derivatives of polyoxyalkylene and lipoprotein lipase so as to generate either hydrogen peroxide or reduced coenzyme to determine the amount of triglyceride in VLDL and IDL. Furthermore, Matsui et al particularly point out that polyoxyethylene nonylphenyl ether is one specific polyoxyalkylene derivative that is a preferred surfactant for acting on lipoproteins, and that the HLB value of a surfactant is important in determining its specificity toward lipoproteins. Matsui et al further beneficially teach that particular HLB values of surfactant are beneficial for acting on particular lipoproteins, and that calculating HLB values is well known in the art, and therefore, it would have been both obvious and beneficial for one of skill in the art at the time the claimed invention was made to use particular surfactants, as described by both Okada et al and Matsui et al, in particular mole number ratios of the polyoxyalkylene derivatives (i.e., the hydrophilic group) so as to vary the selectivity of the surfactant for different lipoproteins based upon the HLB value, as beneficially taught by Matsui et al. The result-effective adjustment of particular conventional working conditions (e.g., using a particular surfactant and/or using a particular ratio of added polyoxyalkylene in each of the selective reaction promoters) is deemed merely a matter of judicious selection and routine optimization which is well within the purview of the skilled artisan.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole, was *prima facie* obvious to one of

ordinary skill in the art at the time the claimed invention was made, as evidenced by the cited references, especially in the absence of evidence to the contrary.

Response to Arguments

Applicant's arguments filed 10 December 2007 have been fully considered but they are not persuasive. In particular, Applicants argue that the reagent of claim 13 has high selectivity to VLDL and IDL.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the reagent of claim 13 has high selectivity for VLDL and IDL and that using two lipoprotein lipases which are dependent and independent on the concentration of a surfactant allowed triglycerides contained in the chylomicron fractions, LDL, and HDL to hardly be measured) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Furthermore, the Examiner notes that Applicant's other arguments (i.e., with respect to the reagents existing in a particular m/n ratio, etc.) relate to aspects of the claims which do not confer patentability on reagents since the skilled artisan would be capable of determining how best to utilize a reagent, such as determination of how much of a particular reagent to use in a particular method to suit the purposes of the assay being performed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

No claims allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMANDA P. WOOD whose telephone number is (571)272-8141. The examiner can normally be reached on M-F 8:30AM -5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on (571) 272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1655

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

APW
Examiner
Art Unit 1657

/Christopher R. Tate/
Primary Examiner, Art Unit 1655